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~~3 14 0~~ 12 71

Under the head of the sensible qualities of the Air I have mentioned its rarity and density; on each of which I shall deliver a few remarks. — V

Air highly rarefied such as exists upon very high mountains produces many a palpitation very distressing effects. These are ~~a palpitation~~ of the heart — sickness at the stomach, loathing of food — great thirst profuse sweats, sleepiness, great pain from the action of the sunrays — an aversion from Spirituous liquors upon the skin — a quick ~~weak~~ pulse, with great muscular weakness. M. Saussure who describes these Symptoms as occuring on Mount Blanc in Switzerland says he could not advance more than 15, or 16 Steps without stopping to take breath. After resting a

v Le Baron Humboldt who ascended to
the Summit of the Jenibamaco a Mountain
=tain in South America 20,000 feet
above the Level of the Ocean, and of Course
the highest Mountain in the World, the
informed me that the
Rarity of the Air, produced
Haemorrhages from his mouth, rose &
Lips, a redness in his eyes, sickness at his
Stomach and a pain in his breast which
continued for Several days afterwards. His
sense of Cold the days was very great, altho'
the Mercury fluctuated between 40° & 50°
of Farenheit. The Oxygen was reduced by
in the Air
his Eudiometer to 19 parts in the 100.

The Moon upon this Mountain was so
from the light pressure of the Air on it
soft and yielding that a Stone fell thro' it
to as if it had been thrown into Water,
from the light pressure of the Air upon its But

few minutes those Symptoms went off,
but they returned with the last exertion.
Even the mules which accompanied him
were affected with insensibility of their
limbs, ~~and~~ difficulty of breathing - panting &
~~and~~ ~~in succession with the~~
~~pulse~~ an emission of blood
Pulse. The mercury at this time stood
at 12 inches. These Symptoms of disease
and distress have been attributed to a defi-
-ciency of Oxygen in the upper regions
of the Air, and a rapid Consumption
of the Combustible matter in the lungs
of the inspired, constituted the impure
blood, such as
Air discharged by respiration. But they are
more probably occasioned by the sudden disproportion between
the density of the external & internal Air.

= a more extraordinary instance of the effects
of the rarity of the air upon the human body oc=
=curred at Padua on the 22d of August 1808.
Two Gentlemen viz Mr Andreoli and Mr Bri=
=oschi ascended in a balloon together. ~~from back.~~

On the 22d of Auguſt, laſt year, M. Andreoli, and M. Brioſchi, aſcended in a balloon at Padua.— When the mercury had fallen tō 15 inches, about the height of $3\frac{7}{8}$ miles the latter began to feel an extraordinary palpitation of the heart, without any painful ſenſation in breathing When the mercury was down to 12, ($4\frac{1}{2}$ miles) he was overpowered with a pleaſing ſleep, that ſoon became a real lethargy. The balloon continued aſcending, & when the mercury was about nine inches, (near ſix miles) M. Andreoli perceived himſelf ſwollen all over, and could not move his left hand.— When the mercury had fallen to 8,5 [about ſix miles and a quarter,] the balloon burſt with a loud exploſion, and began to deſcend rapidly with much noiſe, which awoke M. Brioſchi. It fell about 12 miles from Padua, without any injury to the aerial travellers.

1808 *London Mag.*

The diſtreſſing
effects of the air upon Baron
than
Humboldt & the adventurers
in the Balloon probably
arose from the more
gradual manner in w. ch
the Baron was expos'd to
it. ‡ The ~~boon~~ both ~~Gen~~

Symptoms of diſeaſe and diſtreſs that have
been mentioned, have been aſcribed to a deficiency
of Oxygen in the upper regions of the air, but
I ſhall preſently mention another cauſe
which probably cooperates with it. air exhaled
‡ A woman died ſuddenly in the ſtage on the
ſummit of the Allegany from an Hemoptyſis.
She had been affected with a ~~few~~ weak breaſt.

~~Air~~ ~~compressed~~ ~~in~~ its density that is above 28 inches,
~~blood difficult from~~ ~~heart~~
by compressing the lungs, hinders the return
of the blood difficult from the brain, and thus
produced ~~a~~ cephalic Congestions. ~~In the year~~
~~1768 & 1770 The mercury in the Barometer stood~~
~~at an unusual height for a part of~~
The Pneumonies which occur in a pretematu-
-rally Dense Air it has been Observed by Dr.
Fowler, resolve themselves by Stools & sweats, and
not by Expectoration owing to the pressure
of the Air upon the lungs. Asthmatic and
Consumptive people suffer greatly from it,
and the same Author says Dropsical patients
exhibit an increase or decrease of swellings
according as the Mercury rises or falls in the
Barometer.

The influence of the different Degrees of
rarity & density of the Air, may easily be conceived
of by recollecting their effects on fluids in and
out of an exhausted receiver.

V The rarity & Density of the air like heat & cold act re-
latively upon the body. ~~It~~
~~The~~ As the suddenness of the Changes in the
Temperature of the air ~~is more~~ affects health
& life more than its extremes of heat & cold,
so the suddenness in the changes in the Density
& rarity of the air, produce worse effects on
the body than the ordinary extremes of each
of them. Emilcaille a french writer ascribes
a number of sudden deaths which occured at
Plivers in Decem 1747 to a sudden diminution
of the weight of the air. The mercury fell in
two hours in two inches, & 9 lines in the
Barometer. It has been remarked that old
sores, & Rheumatic pains are often made
worse by a sudden diminution of the weight
of the atmosphere. = Birds ~~Insects~~ in Siberia
~~When the density of the~~ air is gradually
rarified, the ~~body~~ strength are dispersed by it,
~~but when it is~~ fall down & are unable to rise
so when the air suddenly passes from a rare to a dense state.
~~density to quality~~ 82 - especially vapour
all act differently as seperate or combined. —

in the Barometer.

It has been observed that the ☿ varies in its heights at different periods in the four & twenty hours. It begins to rise in the beginning of the night - & continues to rise till midnight, It after which it descends gradually till the approach of day - then it ascends gradually till midday, when it again descends till evening, rising a little while at each time before its ascent, & then descent. The times of its rest are so regular that B: Humboldt informed me they had served him at one time instead of a Clock or Watch. The greatest changes in the Thermometer generally take place at the same time of these changes in the Barometer. These facts are important as they tend to throw some light upon the changes which take place in Diseases, and perhaps of some of the variations of the state of the System in health. May not the pulse be influenced in its frequency of some in the Different times of the day and by them night?

16.10.

=. Birds in some parts of Siberia travellers tell us, fall suddenly from the air, and are unable to rise from the ground when the air passes suddenly from a rare to a dense state.

The rarity & Density of the air; and the suddenness of with which it passes into either of them affect the human body more or less according to the quantity or less presence of heat, cold, moisture or dryness in the atmosphere. The Latter thus considered the effects of air acting externally upon the body, but a

under this head, I shall introduce an Account of a new work which has lately been published in France by a Dr Vidal upon what he calls "Gas Animal", or in other words upon the influence of Air in its elastic state within the body. When excessive in quantity or out of Place, there is a great difference between the effects

[being in 1809 after windsle]

of Air injected into the blood vessels, & into
parts not accustomed to contain it in a healthy
Animals, and the evolution of air from the
Solids & fluids of the body in a diseased
state after with its excitability is nearly or totally
expended by irritants, or by matter not belonging
to the natural stimuli of life. Readers here
the difference in the effects of irritants applied
suddenly & slowly in the production of pain.
~~I must for this~~ This remark being premised
you will be prepared to hear that the following
facts collected by Dr Vidal. I He mentions many
instances of paralysis in matters dwellings & in
the trunk and about the head in palsies and
asphasies. 2 He mentions an instance from Deffaen
of a man ~~from Deffaen~~ who was afflicted
~~discharged~~ with palpitation of the
~~Air & Ammonia when~~ heart, Cough and Vertigo who emitted his
breath when ever his body was severely
pressed. Several Cases similar to this are
quoted from Morgagni, Bartholine, and

Rhodius. — 3 He mentions from a Dr Neil
the case of a young man who married
after indulging himself to great excess in
Venery, discharged Air only thro' his Urethra
in his Venereal intercourse with his wife.
p: 61.

4 He mentions from Dr Hales exp: 19. Part: IV
an experiment which proves that Air
passes freely from the blood into the stomach
& bowels.

5 He mentions the appearances of the
blood when drawn from a Vein, and of matter
discharged from the stomach in puking, in
both of which there are appearances of Air
in its elastic state.

6 He gives a long list of authors who have
discovered Air to be present in the different
Cavities of the body after death from a great
number of diseases. Portal found it in the brain.

upon the subject of this new card

interesting work. I shall make two remarks.
1 I have no Doubt of the dissemination of
air from the blood into the stomach &
bowels in several Diseases / particularly in
bilious fevers. This idea occurred to me with
great force in the fever of 1793 in which a
Belching of wind was a constant & distressing
symptom During each paroxysm of the fever
and in Cases where the stomach and bowels
contained neither Aliment nor Drinks. This
discharge of wind ceased with the cessation
of the paroxysm of fever. The fluids in this
~~paroxysm this~~ state of the System & blood & other
in a centripetal Directions. They are probably
partly decomposed
from the violent Action of the blood Vessels
upon them ~~partly decomposed~~ in Consequence
of which they evolve their Air in an elastic
State.

2 I have mentioned in the history of
the puke a Gaseous puke which occurs

in malignant fevers more especially towards
this Close and after copious blood letting.
& soft, but and
is full, ^ yields to the lightest pressure.
— May not this pulse be kept up by the
stimulus of Air in a rarefied state in the
blood Vessels? Dr Hook two days be expired
the action of the heart after death
the blood Vessels, and Dr Haller asserts that
Air stimulates the heart more powerfully
than blood itself. — In addition to these facts
I shall add two more viz the escape of Air from the
Vein of a man bled last Surgery in the hospital 1811 &
informed me that he had frequently upon
opening a Vein heard a noise that resembled
the sudden issuing of Air from a place in
which it had been confined. —
If the presence of Air in an elastic
state be admitted in the body it will account
for the sudden deaths induced by the sudden dimi-
nution of the weight of the Air at Plurviers.
— The deaths were induced by the too
sudden expansion of the Air in the body stimulating it
by over distension to its disturbing

~~3 5~~ 77 ~~[illegible]~~ On the effects of Winds on

13 Dr. ~~[illegible]~~ Dr. health &c 1 D 1 D

fc

Corded

~~I shall~~ Having considered the effects of heat & cold in their positive & relative operation on the human body, I proceed to mention the effects of the winds in producing Diseases.

They are hot & cold, wet and dry according to the situation of Countries. E.g. in the United States they are hot from the South because they come from the heated Soil of North America & cold from the north because they come from Canada, & still higher Latitudes. Dry from the west because they come from high & dry latitudes, & wet from the East because they pass along the Atlantic Ocean. In Britain the west wind is moist from the same cause as our East wind is wet, viz it coming across the Atlantic Ocean.

In addition to their operation as hot cold - wet & Dry - the winds act upon the body according to the following relative circumstances.

1st Heat is lessened & cold encreased by them. Cold is encreased by moist winds, &

D

5 Dr Abbott mentions a curious
~~fact of a high winds and said to carry~~
fact of a high wind producing an Epidemic
bilious fever. Upon enquiry it was found
it had passed over a Lake and by drying
it from its immense fore, exposed its bottom
to the rays of the Sun, & thus favoured the
production of those exhalations which I
shall presently say are the causes of those
fevers. Take notice of this fact - for it is
contrary of the usual effects of high winds
on bilious fevers. They are generally checked
by them.

~~The~~ exposed by such as are Dry.

2 Winds are to the body, compared with Air,
what ~~the cold bath is to~~ washing it with Wa=
is, to bare impression in a cold bath: & they produce
-ter; ~~they produce not~~ the same ~~effects~~ - time when the
indirectly stimulating effects; -
body is long exposed to them, they debilitate
by the expenditure of excitability. who has
not felt fatigue - in walking, or travelling agt the wind.
3 The Transitions of the weather from heat
to cold & vice versa more certainly affect the
body with debility and disease when they
are accompanied with a high or strong
Wind. ~~Last~~ Eastern; most common when this is the
Case. But
4 Winds affect the body with debility & disease
when they suddenly change from a Course.
~~that is~~ even where they are not attended w:
the least change in the thermometer. This
is always the case Dr Moseley says in Jamaica
when the wind which generally blows from
the East, suddenly blows from the South, or
West. ~~X~~

5 ~~The~~ The Winds ~~are said to~~ produce certain changes
~~in disease to Colic~~

in the faculties & Operations of the mind
which is hot & Dry dulls the ~~two~~ understanding.
This fact is so notorious that it is common
in that Country & in some parts of Italy to
call a dull or stupid book "a Syrocco performance."
- The South wind at Rome obtained the epithet
of "Plumbeus Auster" probably from its effec-
-ting the intellects with heaviness or inability
to act with their customary alacrity. The
Air from the Sea at Montpelier is said to
produce the same effect. In North? Country
in England ~~at the Sea~~ the wind from the Sea ch:
generally conveys a moisture or a mist with it
produces perishness of tempers known by the
name of Sea fret. The same thing occurs in
Barcelona in Spain. & from the
The north East Wind has an unfriendly effect
upon the feelings of the inhabitants of the
Middle States of America.
6 The winds act more uniformly upon
invalids than upon healthy people. The

V The Changes in the weather induced by the
Vernal & autumnal equinoxes are unfavourable to
health. Dr Currie observed an increase of febrile patients
in the Liverpool Infirmary at these periods, and Dr Denman
14 days never more frequently at those periods.

V The Hurricanes in the West Indies are some-
times ~~being the forerunners~~ injurious by ~~over~~ elevating
the sea so as to overflow the land where
by mixing with vegetable matters it
produces putrefaction & exhalations &
fevers, but

East winds is most hostile to such people than any Other. They affect ~~pa~~ asthmatic ~~ca~~ coughs true, & Rheumatic patients most. I know a Sea Captain who is subject to Asthma who can tell in his bed at midnight when the wind changes to the Eastern points of the Compass.

Winds from any quarter attended with so much force as to Constitute a stormy weather not only they produce great Changes in Diseases, but they affect persons of a certain description, in health. They are said to bring on parturition - & hence the complaint of being called out Oftentimes ~~is~~ ive Stormy weather. Perhaps the labor is induced only by the fear - this is probably well founded. An Old Nurse assisted by the Storm. informed me she had often observed Children to be more affected with the Belly ache in Stormy weather, than in any Other kind of weather. V

The late discoveries of the heterogeneous
nature of the Air, prepare us to believe
it to be capable of decompositions, and of
losses of a new & morbid arrangement
of its Constituent parts. It is possible the
sickening quality acquired by a stagnating
Atmosphere, may be confined only to
those Airs which are ~~occasionally~~ frequently
agitated by the Winds. I am led to make
this remark, by a fact communicated to
me by Baron Humboldt, He said that
in an extensive Country inhabited by several
tribes of Indians on the head waters of the
Orinoque & Black River in South America,
no leaf had ever been seen to be moved by
a breath of Air. The Indians have not in
their language a word to express Wind, &
yet they are not more sickly than persons other
equal circumstances (the absence of Wind excepted)

not only Winds, but the Absence of all
Wind produces Disease. Hippocrates long ago
mentioned the Season "sine Aura" as a
sickly One. The Calms at Sea when
of long continuance generally produce Sick-
=ness. This was unfavrd in the first ships
that ~~sailed~~ embarked in the East India Trade
from England particularly on board a
Vessel commanded by a Capt: Lancaster
in the year 1603. It has since been
taken notice of ~~by~~ by D^r Clark in his treatise
upon the diseases of East India Voyages.
I pass over
I ~~shall touch~~ the diseases produced
by the Winds when they are impregnated
with noxious matter, ~~they will~~ and other
adventitious matters. They will come in
more properly hereafter. Introduce
here in 1806 relative effects of Seasons &
Variations Vide No 2

in ~~Other parts of South America~~